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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,843	10/22/2003	Kenji Kaneko	p24428.dc1.doc	4235
7055	7590	07/12/2005	EXAMINER	
GREENBLUM & BERNSTEIN, P.L.C.			SMITH, RICHARD A	
1950 ROLAND CLARKE PLACE			ART UNIT	
RESTON, VA 20191			PAPER NUMBER	

2859

DATE MAILED: 07/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/689,843

Applicant(s)

KANEKO, KENJI

Examiner

R. Alexander Smith

Art Unit

2859

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 9-11 and 13 is/are rejected.
- 7) ☒ Claim(s) 7 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 2 and 13 are finally rejected under 35 U.S.C. 102(e) as being anticipated by U.S. 2003/0048355 to Shimoyama et al.

Shimoyama et al. discloses the limitations of claim 2 and 13 when the first collimator optical system is the spare collimation device 89, the second collimator is 122 and/or 45 and the zooming mechanism is 19' and the discussion of the view being wider for the spare collimation device disclosed throughout the specification.

With respect to claim 2 and the newly added limitations: In a broad sense the limitations as claimed are met by the wide angle zoom disclosed by Shimoyama et al. {see response to arguments).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 11 is finally rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 2003/0048355 to Shimoyama et al.

Shimoyama et al. discloses a surveying system employing a first automatic collimator 89, a second automatic collimator 47, a target recognition system for both first and second collimators, said first collimating operation is performed before the second collimating operation.

Shimoyama et al. does not disclose the first collimating operation being performed when said target recognition processing circuit determines that a survey point is within the field of view of the first collimator optical system

Shimoyama et al. discloses that the second collimating operation is performed when the second automatic collimator and target recognition processing circuit determines that the survey point is within the field of view (see the last third of paragraph 52). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the first collimating operation performed when said target recognition processing circuit determines that

the survey point is within the field of view of the first collimator optical system in order to automatic align the target for pickup by the second collimator optical system.

5. Claims 1-6, 9 and 10 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 6,487,011 to Donath et al. in view of U.S. 6,504,602 to Hinderling.

Donath et al. discloses a surveying instrument (column 1, lines 8-31) having a surveying instrument body (column 2, lines 1-10) having a first collimator optical system (comprising 1, 2, 10.1, 15 and 4) and a second collimator optical system (comprising 1, 11, 10.2, 15 and 4) each of which is positioned in said surveying instrument body to collimate said surveying instrument relative to a survey point, a viewing angle of said second collimator optical system being smaller than a viewing angle of said first collimator optical system (column 4, lines 6-30), wherein a first collimating operation is performed with said first collimator optical system after a second collimating operation is performed with said second collimator optical system, the instrument comprising an image sensor (4), wherein said second collimator optical system is capable of forming an image on said image sensor, said first collimator optical system and said second collimator optical system share the use of said image sensor, said collimator optical system is positioned to be capable of forming said image of said target on said image sensor.

Furthermore, Donath et al. discloses that the signal information for the wide viewing angle, the smaller viewing angle, and the distance measuring are sent to an evaluating unit (9).

Donath et al. does not disclose said surveying instrument comprising a surveying instrument body rotatable about each of a vertical axis and a horizontal axis, the instrument

comprising an auto-collimating system which drives said surveying instrument body to rotate about each of said vertical axis and said horizontal axis to position an image of a target at said survey point within a field-of-view of said first collimator optical system, wherein each of said first collimator optical system and said second collimator optical system comprises a light source for projecting light rays toward said survey point to collimate said surveying instrument relative to said survey point, wherein said collimator optical system comprises a zoom mechanism for varying a focal length of said collimator optical system, a telescope optical system positioned in the body wherein said viewing angle of said collimating optical system is greater than the viewing angle of said telescope optical system, and said survey point laying within a field of view of said telescope optical system.

Hinderling discloses a surveying instrument employing an evaluation unit (processor 25), cameras for guiding motor assisted, automated alignment of the instrument with a target (column 4, line 55 through column 5, line 39) which includes a surveying instrument body rotatable about each of a vertical axis and a horizontal axis, an auto-collimating system which drives said surveying instrument body to rotate about each of said vertical axis and said horizontal axis to position an image of a target at said survey point within a field-of-view of said first collimator optical system, and discloses that various optical systems including target seeking and auto-focus can each employ separate light sources (λ 's 1-4) in order to help distinguish the appropriate source to the appropriate sensor utilizing said source to help prevent interference and noise when functioning simultaneously, a zoom mechanism (22) which can be used if a well defined image is desired for the eyepiece or for the various sensors, a telescope optical system positioned in the body, and said survey point laying within a field of view of said telescope optical system.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the instrument, taught by Donath et al., by including the rotatable body with the auto-collimating system about the horizontal axis and vertical axis, and to have the first and second collimator systems each comprise a light source, as taught by Hinderling, in order to provide a fast means to align the surveying instrument to the target and to help distinguish the appropriate source to the appropriate sensor and to help prevent interference and noise should both sources be operating at the same time.

Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the instrument, taught by Donath et al., by including a zoom mechanism for varying a focal length, and by including a telescope optical system wherein said survey point is aligned within a field of view of the telescope optical system, as taught by Hinderling, in order to provide a well defined image to the sensors and the telescope optical system when desired, and to allow the user to visually align the instrument or to visually verify alignment should the auto-collimation or focusing system not perform as expected.

With respect to said viewing angle of said collimating optical system is greater than the viewing angle of said telescope optical system: Donath et al. discloses the viewing angle of said second collimator optical system being smaller than a viewing angle of said first collimator optical system by a preferred ratio of 1 to 3. Hinderling discloses that the telescope optical system and the collimator optical system preferably have the same field of view. Therefore, Donath et al., as modified by Hinderling, would inherently have the wider viewing angle for the collimating optical system being greater than that for the telescope optical system in order to visually verify and manually align the system accurately to the target if necessary. Furthermore,

this limitation is only considered to be the "optimum" ratio or values of the collimation to telescope optical system of the instrument disclosed by Donath et al as modified by Hinderling, as stated above, that a person having ordinary skill in the art would have been able to determine using routine experimentation based, among other things, on the providing a sufficiently accurate and large view of the target to visually verify proper alignment once the auto-collimation system has found the target. See In re Boesch, 205 USPQ 215 (CCPA 1980).

Response to Arguments

Applicant's arguments filed April 6, 2005 with respect to Ohtomo et al. and Ohtomo in combination are persuasive and the rejections applied have been withdrawn.

With respect to Shimoyama et al. and claims 1, 4 and 5: The Applicant's arguments are persuasive and the 102(e) rejection of claims 1, 4 and 5 has been withdrawn.

With respect to Shimoyama et al., claim 2 and the newly added limitations: In a broad sense the limitations as claimed are met by the wide angle zoom disclosed by Shimoyama et al. since the zoom does vary between the two limitations. The claim does not state the zoom is inclusive of the full range disclosed, i.e., comprises a focal length that spans the range of a wide angle view to a telephoto view, or must have a focal length that varies from wide *to that of* telephoto as argued, it only states that the focal length must vary between the two and it appears

to the examiner that a wide angle zoom, a telephoto zoom, or any zoom having an adjustable focal length meets the limitations as claimed.

With respect to Donath et al. in view of Hinderling, the Applicant's arguments are not persuasive for the following reasons:

Donath et al. and Hinderling each disclose that their invention is applicable and intended for use with theodolites. Hinderling not teaching multiple collimator optical systems as argued is not persuasive since Donath et al. is relied upon for the teaching of first and second target-seeking systems, and the evaluation unit to decide when to switch from the first wide angle to the second beam path for target seeking. Donath et al. states that said system is intended for a theodolite, but does not disclose components common to a target seeking theodolite. Donath et al. also discloses very briefly and broadly that interference and crosstalk is a potential problem. Hinderling was relied upon for the teaching of common components of a motorized theodolite under electronic control that aligns itself to a target (column 8, lines 27-65) and that the use of differing light sources that emit differing and/or spectrally separable wavelengths provides various advantages as discussed throughout the specification, one being to help avoid potential interference and noise. It appears to the examiner that it would be obvious to one of ordinary skill in the art at the time of the invention to provide Donath et al. with theodolite components as suggested by Donath et al. and taught by Hinderling, in order to allow the target seeking system to perform as intended on a theodolite, and to provide separate light sources as suggested by Hinderling, in order to provide a fast means to align the surveying instrument to the target and to help distinguish the appropriate source to the appropriate sensor while helping to prevent

interference and noise should both sources be operating at the same time.

With respect to the zoom, please note Shimoyama et al. and claim 2 above.

Allowable Subject Matter

6. Claims 7 and 12 would be allowable if rewritten to overcome the claim objections set forth in this Office Action and to include all of the limitations of the base claim and any intervening claims.

7. As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to R. Alexander Smith whose telephone number is 571-272-2251. The examiner can normally be reached on Monday through Friday from 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F. Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'R. Alexander Smith', with a long horizontal stroke extending to the right.

R. Alexander Smith
Primary Examiner
Technology Center 2800

RAS
July 11, 2005